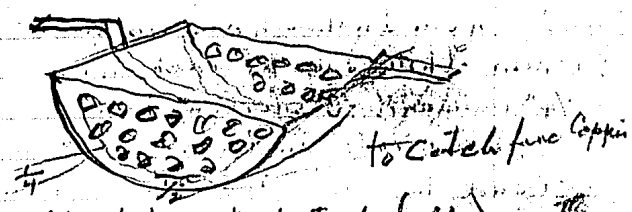
Notebook Series -- Notebooks by Edison and Other Experimenters
Disc Plating Experiments
Notebook, N-20-06-12.1

This notebook was used during June-August 1920 by Edison, Walter N. Archer, Frank Detlef, Jr., Howard F. Redford, and possibly other experimenters. The entries pertain to the plating processes involved in the manufacture of disc records. The early entries by Edison focus on attempts to copperplate with anodes made from nickel-faced copper molds no longer needed for production. Following these entries are tabular reports of various molds plated in "Bath 8" in June and July with information on the date and time, specific gravity, volts, amps, and other conditions during plating. There are occasional notes, suggestions, and instructions by Edison. The second part of the book relates to a series of experiments conducted by Archer in July and August in which rubber varnish was used for protection against copper depositing on the backs of the molds. There are occasional notations by experimenter Paul B. Kasakove, which he added to the book during the 1960s while working as an interpreter at the Edison National Historic Site. The front cover is labeled "June 12-20-To July 31-20-" and is marked "No 8." The pages are unnumbered. Approximately 160 pages have been used.

~~Stales on opposite page started to Crystalize nothing stocking where started to crystalize.~~

The front Nickel actually has all disappeared Eaten up entirely probably gone into fumes + some dissolved –

Bath 8



Nickel basket not plated filled with the Copper pieces cut from working moulds bent + twisted so all porous – No Cloth filter –

Time PM	SG	Volt	Amp	Temp	Total amp
00	1170	9-5	2.3	82	2.3
00	1170	9-5	2.5	82	4.8
00	1170	9-5	2.5	80	7.3
00	1170	9-5	2.5	80	9.8
00	1170	9-5	2.7	83	12.5
00	1170	9-5	2.7	83	15.2
00	1170	9-5	2.7	83	17.9
00	1170	9.5	2.8	83	20.7
00	1170	9.5	2.8	81	23.5
AM 00	1170	9-5	2.7	85	26.2
00	1170	9-5	2.7	84	28.9
00	1170	9-5	2.7	84	31.6
00	1170	9-5	2.8	82	34.4
00	1170	9-5	2.8	82	37.2
00	1170	9.5	2.8	82	40.0

started to crystalize

Sunday 4 pm Lyonite bath warm a
Varnish — blistered up at back 3/4 dia
+ 1/4" outwardly. 3 blisters like
this — Varnishes must be made
to stand higher temps, Cu getting
unbelieved. Var + Copper plating
under neath Very bad

Anode basket side broken off
2.30 PM

facing the disc —

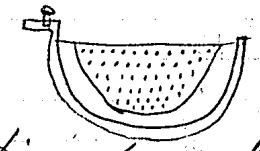
Investigate if Perforated face
was really Nickel

Basket with face gone is
unnecessary OK without
it — its practically only
the back is necessary
the other part of basket
could be an insulator

Bath 8

4 M	S.G.	Volt	Amp	Temp	Total amp
00	1170	9.5	27	82	427
7-00	1170	9.5	27	81	454
8-00	1170	9.5	27	84	481
00	1170	9.5	27	82	508
00	1170	9.5	27	82	535
00	1170	9.5	27	82	562
2-00 PM	1175	9.5	27	81	589
00	1175	9-5	26	81	615
00	1175	9-5	26 1/2	81	641
00	1175	9-5	28	82	669
					Taken Out

6.46 Amp for 24 hours
at about 27 amp per hour
Out 3.00 PM



1st Disc from basket Anode
Chamber filled June-25

No 8 Bath 1st Disc from Anode

TONE 25 PM	Slow	Volts.	Amp	Temp	Total
1:45	1170	9-5	17 3/4	80	
4:45	1170	9-5	18	80	18
5:45	1170	9-5	18	80	36
6:45	1170	9-5	18	80	54
7:45	1170	9-5	18 1/2	80	72
8:45	1170	9-5	18 1/2	82	91
9:45	1170	9-5	18 1/2	82	109
10:45	1170	9-5	19	82	128
11:45	1170	9-5	19	82	147
12:45	1170	9-5	20	81	167
1:45 AM	1170	9-5	19	83	186
2:45	1170	9-5	19	83	205
3:45	1170	9-5	19	83	224
4:45	1170	9-5	19	81	243
5:45	1170	9-5	19	81	262
6:45	1170	9-5	19	81	281
7:45	1170	9-5	19	81	300
8:45	1170	9-5	19	81	319
9:45	1170	9-5	19	81	338
10:45	1170	9-5	18	81	356
11:45	1170	9-5	18	81	374
12:45	1170	9-5	18	80	392
1:00 AM					
1:00	1170	9-5	18	80	400
2:00	1170	9-5	18	80	418

over

No 8 Bath 1st Disc in from anode

JUNE 26 PM	Sec	Volts	Amp	Temp	Total
00	1170	9½	18	83	436
00	1170	9-5	18	83	454
00	1170	9-5	18	80	472
00	1170	9-5	18	80	490
00	1170	9-5	18	83	508
00	1170	9-5	18	83	526
00	1170	9-5	18	83	544
00	1170	9-5	18	83	562
00	1170	9-5	18	83	580
00	1170	9-5	18	8	598
47 June 29					
00	1170	9-5	18	81	616
00	1170	9-5	17	80	633
00	1170	9-5	17	81	650
00	1170	9-5	17	81	667
00	1170	9-5	18	81	685
00	1170	9-5	18	81	703
00	1170	9-5	18	81	721
00	1170	9-5	18	81	739
00	1170	9-5	18½	83	757
00	1170	9-5	18½	83	775
00	1170	9-5	18½	83	793
00	1170	9-5	18	83	801
00	1170	9-5	18	83	819
00	1170	9-5	18	83	837.

No 8-Bath 1st Disc Out
from anode

JUNE 27 PM	Hr	Volts	Amp	Amp	Total
00	1170	9-5	18½	83	855
30	1170	9-5	18	83	864 Amp
			Out		

48-½ hours
18 Amp per hour

Bath No 8 - 2nd Disc in same anod started

ONE 27 PM	Sln	Volts	Amp	Temp	Total
00	1170	9-5	18	83	
00	1170	9-5	18	83	18
00	1170	9-5	18	83	36
00	1170	9-5	18	83	54
00	1170	9-5	18	81	72
00	1170	9-5	18	81	90
00	1170	9-5	18	81	108
00	1170	9-5	17	80	125
AM	June 28				
00	1170	9-5	17½	80	142
00	1170	9-5	17½	80	160
00	1170	9-5	16	81	176
00	1170	9-5	16	81	192
00	1170	9-5	16	81	208
00	1170	9-5	16	81	224
00	1170	9-5	17½	82	241
00	1170	9-5	16½	82	258
00	1170	9-5	17	81	275
00	1170	9-5	17	81	292
00	1170	9-5	16.5	83	308
00	1170	9-5	17	83	325
M.	1175	9-5	16	80	341
"	1175	9-5	16	83	357
"	1175	9-5	15.5	81	373
"	1150	9-5	15.5	82	388

#8 Bath

2nd disc.
disc. scrap anode

June 28, 20.

Date	Sp. Gr.	Volts	Amps.	Temp.	Total	
5 P.M.	1165	9-5	16.5	78	405	
6 "	1165	9-5	16	80	421	
7 "	1165	9-5	16-5	80	437	
8 "	1165	9-5	16-5	80	454	
9 "	1165	9-5	16.5	80	470	
10 "	1165	9-5	16.5	80	487	
11 "	1165	9-5	16	80	503	
12 "	1165	9-5	16	80	519	
A.M.	June 29					
1:00	1165	9-5	16	81	535	
2:00	1165	9-5	16	81	551	
3:00	1165	9-5	16	82	567	
4:00	1165	9-5	16	82	583	
5:00	1165	9-5	16	81	603	
6:00	1165	9-5	16	81	619	
7:00	1165	9-5	16	82	635	
8:00	1165	9-5	16	82	651	
9 -	1165	9-5	16.5	87	667	
10 -	1165	9-5	16.5	86	684	Raised ½ v. at 10:15 A.M.
11 -	1165	10.	17	90	701	
12 -	1165	10.	17	86	718	
1 P.M.	1165	10.	16	90	730	
2 "	1165	10.	16.5	90	746	
3 "	1165	10.	16.5	90	763	
4 "	1165	10	16	88	779	

575) 962 (16.7
575
3870
3450
4200
4025

#8 Bath #2 disc
disc. scrap anode.

Start June 27, 20 5 P.M.
Finish " 30, 20 3.30 A.M.
Total amp = 962
Average " = 16.7
Total hours. = 57½

Left in by mistake

#8 Bath

2nd disc.
disc. scrap anode

June 29	Sp Gr	Volts	Amp	Temp	Total	
5 PM	1165	10	16.5	87	795	
6 "	1165	10	16.5	85	812	
7 "	1165	10	16.5	85	828	
8	1165	10	17	85	845	
9	1165	10	17	85	862	
10	1165	10	17	85	879	
11	1165	10	17.5	85	896	
12	1165	10	17.5	83	914	
1 AM	June 30.					
2	1165	10	16	82	930	
3	1165	10	16	82	946	
3.30	1165	10	16	82	962	Out. Left in by mistake

Req Drap - feed made
partition, Wash Req

No 8 1st Line in Bath

	Hr	Volts	Amp	Temp	Total	
JULY 2 PM						
1:00	1165	9-5	16	80		
2:00	1165	9-5	16	80	16	
AM	JULY-4th					
1:00	1165	9-5	16	80	32	
2:00	1165	9-5	16	80	48	
3:00	1165	9-5	18	83	66	
4:00	1165	9-5	18	83	84	
5:00	1165	9-5	18	83	102	
6:00	1165	9-5	18	83	120	
7:00	1165	9-5	18	83	138	
8:00	1165	9-5	17½	84	155	
9	1165	9-5	18	84	173	
10	1165	9-5	18	84	191	
11	1165	9-5	18	82	209	
12:00 PM	1165	9-5	17	82	226	
1:00	1165	9-5	17	82	243	Not a number
2:00	1165	9-5	17	84	260	
3	1165	9-5	17-5	83	277	
4	1165	9-5	17-5	83	295	
5	1165	9-5	17-5	83	312	
6	1165	9-5	17-5	82	330	
7	1165	9-5	17-5	82	347	
8	1165	9-5	17-5	81	365	
9	1165	9-5	17-5	81	382	
10	1165	9-5	17-5	81	400	

Cleaned up .045
Outside caliper = .053
Inside " = .063

45) 753 (16.7
45
303
270
330
315

Run total to 750 Amps.
#8 Bath after cleaning tank free from grease + oil.
#1st disc.

Start July 3, 20. 11. P.M.
Finish " 5, 20. 8. P.M
Total Amps 753
" hours 45
Average Amp 16.7

No 8 Bath 1st Disc in

Time	Hrs	Volts	Amps	Amps	Total	
P.M. 11.00	1165	9-5	17	81	417	not a not on
12.00	1165	9-5	16	81	433	
A.M.	July 5, 20					
.00	1165	9-5	16	81	449	
.00	1165	9-5	16½	81	465	
.00	1165	9-5	16½	81	482	
.00	1165	9-5	16	81	498	
.00	1165	9-5	16	81	514	
.00	1165	9-5	15½	81	529	
.00	1165	9-5	15½	81	545	
.00	1165	9-5	15½	81	560	
.00	1165	9-5	15½	81	575	not a not on
.00	1165	9-5	16	81	591	
.00	1165	9-5	16	81	607	
1.00 P.M.	1165	9-5	16½	81	624	
.00	1165	9-5	16	81	640	
.00	1165	9-5	16	81	656	
.00	1165	9-5	16	81	672	
.00	1165	9-5	16	81	688	
.00	1165	9-5	16	81	704	
.00	1165	9-5	16½	81	720	
.00	1165	9-5	16½	81	737	not a not on
.00	1165	9-5	16	81	753	Out
					45 hrs	

Would in No 8 edge was rounded off.

Disc. revolves 1½ R.P.M.

Added 5.00 general bath dope to plating solution 11.30 A.M. July 7.

Bath No 8

2nd disc in

July 6

P.M.	Spec	Volts	amps	Temp	Total
4.30	1165	9-5	15	83	
5.30	1165	9-5	15-5	83	15
6.30	1165	9-5	16	83	31
7.30	1165	9-5	16	84	47
8.30	1165	9-5	16	84	63
9.30	1165	9-5	16	84	79
10.30	1165	9-5	16	84	95
11.30	1165	9-5	16	84	111
12.30	1165	9-5	16	84	127
A.M.	July 7				
1.30	1165	9-5	15-5	84	143
2.30	1165	9-5	15-5	84	158
3.30	1165	9-5	15-5	84	174
4.30	1165	9-5	15.5	84	189
5.30	1165	9-5	15-5	84	205
6.30	1165	9-5	15-5	84	220
7.30	1165	9-5	15-5	84	236
8.30	1165	9-5	16	85	252
9.30	1165	9-5	15.5	85	267
10.30	1165	9-5	15.5	85	282
11.30	1165	9.5	15.5	83	298
12.30	1165	9-5	15	82	313
1.30 P.M.	1165	9-5	15	83	328
2.30	1165	9-5	15.5	83	343
3.30	1165	9-5	15.5	84	359

30) 466 (15.5
30
166
150
160

8 Bath

2nd disc in

	Sp. Gr	Volts	Amps	Temp	Total	
2.30	1165	9.5	15.5	84	374	
2.30	1165	9.5	16	85	390	
2.30	1165	9.5	15.5	84	406	
2.30	1165	9.5	15.5	84	421	
2.30	1165	9.5	15.5	83	436	
2.30	1165	9.5	15	83	451	
2.30	1165	9.5	14.5	82	466	Taken out to make room for #2 in plate disc of July 7. 20.

Revolved 2 minutes in Cu bath, was
put in Cu bath wet.
Ni plated disc from #2 Ni Bath
Run to 600 amp hours.
Give to Mr Edison to see if he can
peel it if possible
No skimmer in bath.

#8 Bath

3rd disc.
Ni plated disc
from #2 Bath

July 7, 20.

Date	Sp Gr	Volts	Amps	Temp	Total
11.10 P.M.	1165	9.5	15	82	
12.10	1165	9.5	15	82	15
A.M.	July 8				
1.10	1165	9.5	15	82	30
2.10	1165	9.5	15	82	45
3.10	1165	9.5	15	82	60
4.10	1165	9.5	16	82	76
5.10	1165	9.5	16	82	92
.10	1165	9.5	15.5	82	107
7.10	1165	9.5	15.5	82	123
8.10	1165	9.5	15.5	82	138
9.10	1165	9.5	16	80	154
10.10	1165	9.5	16.5	80	170
11.10	1165	9.5	16.5	82	187
12.10	1165	9.5	16	82	203
1.10 P.M.	1165	9.5	15.5	80	218
2.10	1165	9.5	15.5	80	234
3.10	1165	9.5	15.5	80	249
4.10	1165	9.5	16	80	265
5.10	1165	9.5	16	80	282
6.10	1165	9.5	15.5	81	297
7.10	1165	9.5	15.5	80	313
8.10	1165	9.5	15.5	80	328
9.10	1165	9.5	15.5	80	344
10.10	1165	9.5	15.5	80	359

23 HRS.

Added 10 cc gm. bath dope to copper plate sol. at 11 A.M. July 9
After beds was turned off copper plate stripped from nickel, leaving Ni plate on disc.

```
39 | 602 | 15.2
   39
   212
   195
    170
     78
     32
```

Start July 7, 20, - 11 ~~to~~ PM
Finish " 9, - 2 ~~to~~ PM
Total Amps 602
" hours 39
Average Amps 15.2

"8 Bath

3rd Disc Ni plated disc No 2 Batt.

	Sbn	Volts	Amp	Temp	Total	
10	1165	9-5	15-5	80	375	
10	1165	9-5	15	80	390	
	July	9-20.				
10	1165	9-5	15	80	405	
10	1165	9-5	15	80	420	
10	1165	9-5	15	80	435	
10	1165	9-5	15	80	450	
10	1165	9-5	15	80	465	
10	1165	9-5	14-5	80	479	
10	1165	9-5	14-5	80	494	
10	1165	9-5	14	80	508	
10	1165	9.5	15	78	523	
10	1165	9.5	15.5	79	538	added anode scrap.
10	1170	9.5	15.5	80	554	
10	1165	9.5	16	80	570	
10	1165	9.5	16	82	586	
10	1165	9.5	16	81	602	Out

Copper disc. 8-4 Female
Ran 2 min in Ni bath no current.
Then run to 40 amp hours.

#1 Bath Ni Plate.

3rd disc in
Last anode

Started July 9, 20, 4 30 pm.

	Sp. Gr.	Volts	Amps	Temp	Total	
4 30 pm	1280	9.5	9	85		
4 40	1280	9.5	10	85	10	
4 50	1280	9.5	10	85	20	
5 00	1280	9.5	10	95	30	
5 10	1280	9.5	10	95	40	
5 20	1280	9.5	11	97	51	
5 30	1280	9.5	11	98	62	Cut
11 pm	1.28	9.5	11	98	73	Transfered to #6 Copper bath

Copper disc. S-4 Raw 2 min in hi bath No current.
Take out at 40 Amp-hours

#1 Bath Hi Plate 4 disc

Started July 19, 20. 11.15 P.M.

Time	Gals	Volts	Amp	Temp	Total	
11.15	1280	9.5	11	98		
12.15	1280	9.5	11	98	11	
A.M.	July	10				
1.15	1280	9.5	10	98	21	
2.15	1280	9.5	10	98	31	
3.15	1280	9.5	10	98	41	Out
4.15	1280	9.5				Was taken out by night shift and washed, then put on rack

2nd One Clean it with electric cleaner, 1 minute wash well and rinse with distilled water and put in the bath with switch in and put belt on as quick as possible. Run to 600 Amp hours.

#8 Bath Copper Plate

Started July 10, 20, 11½ P.M.

Time	Sp. Gr.	Volts	Amps.	Temp	Total
11½ PM	1165	9.5	16	80	
12½	1165	9.5	16	80	16
AM	July 10				
1½	1165	9.5	16	80	32
2½	1165	9.5	16	80	48
3½	1165	9.5	16	80	64
4½	1165	9.5	16	80	80
5½	1165	9.5	16	80	96
6½	1165	9.5	16	80	112
7½	1165	9.5	16	80	128
8½	1165	9.5	16	80	144
9½	1165	9.5	16	80	160
10½	1165	9.5	16	80	176
11½	1165	9.5	16	80	192
12½	1165	9.5	16	80	208
1½ PM	1165	9.5	16	80	224
2½	1165	9.5	16	80	240
3½	1165	9.5	16	80	256
4½	1165	9.5	16	80	272
5½	1165	9.5	16	80	288
6½	1165	9.5	16	80	304
7½	1165	9.5	16	80	320
8½	1165	9.5	16	80	336
9½	1165	9.5	16	80	352
10½	1165	9.5	16	80	368

Take out when 600 Amp hours and wash & put on rack

23 Hour

46) 747 (16.2
46×
287
276
102

10.00 Put in more scrap Rice.

#8 Bath Copper Plate

Time	Gr	Volts	Amp	Temp	Total
10 PM	1165	9-5	16	80	384
1.15	1165	9-5	16	80	400
2.15					
AM	Judge	10			
1.15	1165	9-5	16	80	416
2.15	1165	9-5	16	80	432
3.15	1165	9-5	16	80	448
4.15	1165	9-5	16	80	464
5.15	1165	9-5	16	80	480
6.15	1165	9-5	16	80	496
7.15	1165	9-5	16	80	512
8.15	1165	9-5	16	80	528
9.15	1165	9-5	16	80	544
10.15	1165	9-5	17.5	80	561
11.15	1165	9-5	17	80	578
12.15	1165	9-5	17	80	595
PM 1.00	1165	9-5	17	80	612
2.00	1165	9-5	17	80	629
3.00	1165	9-5	17	80	646
4	1165	9-5	17	80	663
5	1165	9-5	17	80	680
6	1165	9-5	17	81	697
7	1165	9-5	17	81	714
8	1165	9-5	17	81	731
9	1165	9-5	16-5	81	747 Amp

Out 46 hours

No 1 Nickel Mould run for 2 minutes before Current put on 155 Amp

No 8 Mould taken from rack put in Bath dry with Current on

No 8 Bath Copper

JULY	Shr	Volts	Amp	Temp	Total
11					
PM	1165	9-5	16.	89	
10-30	1165	9-5	16-5	81	16
11-30	1165	9-5	16-5	81	33
12-30	1165	9-5	16-5	81	33
AM	July	12			
1-30	1165	9-5	16-5	81	49
2-30	1165	9-5	16-5	81	66
3-30	1165	9-5	16-5	81	82
4-30	1165	9-5	16	81	98
5-30	1165	9-5	16	81	114
6-30	1165	9-5	16	81	130
7-30	1165	9-5	16-5	81	147
8-30	1165	9-5	16-5	81	163
9-30	1165	9.5	16.5	83	180
10-30	1165	9.5	16.5	82	196
11-30	1165	9.5	16.5	82	213
12-30	1165	9.5	17.	80	230
1-30	1165	9.5	17	80	247
2-30	1165	9.5	16.5	80	263
3-30	1170	9.5	16.	80	279
4-30	1165	9.5	16.5	80	296
5-30	1165	9.5	17	80	313
6-30	1165	9-5	17	80	330
7-30	1165	9-5	16-5	80	346
8-30	1165	9-5	16-5	80	363
9-30	1165	9.5	16.	81	379

37) 602 (16.2
37
232
232
104

Start July 11, 20 at 10:20 P.M.
Finish " 13, 20 " 11:30 AM.
Total amp 602
" hours. 37
Average amps. 16.2

No 8 Bath

JULY 12	Hr	Volts	Amps	Temp	Total	
12	1165	9-5	16.	83	391	
12	1165	9.5	16.	83	407	
12:30	1165	9.5	16.	83	423	
July 13 20.						
1:00	1165	9.5	16	81	439	
1:30	1165	9.5	16	81	455	
2:00	1165	9.5	16	81	471	
2:30	1165	9.5	16	81	487	
3:00	1165	9.5	16	81	503	
3:30	1165	9.5	16	81	519	
4:00	1165	9.5	16	82	535	
4:30	1165	9.5	16	82	551	
5:00	1165	9.5	17	82	568	
5:30	1165	9.5	17	82	585	
6:00	1165	9.5	17	82	602	Out

Revolve 2 min in Bath
Put in dry.

Ni 171 Amp-hours
Washed-rinsed distilled
water put in wet Cu.
full current on.

45) 762 (16.9
45
312
270
420
405

Total Amps = 762
" hours = 45
Average Amps = 16.9

8 Bath

Started July 13, 20 at 12 noon.

TIME	SP.GR.	VOLTS	AMP.	TEMP	TOTAL
12	1165	9.5	17	85	
1 PM	1165	9.5	17.5	83	17
2 00	1165	9.5	18	85	35
300	1165	9.5	18	85	53
4	1165	9.5	16.5	85	70
5	1165	9.5	17.	85	87
6	1165	9.5	17	80	104
7	1165	9.5	17	80	121
8	1165	9.5	17	80	138
9	1165	9.5	17	85	155
10	1165	9.5	17	84	172
11	1165	9.5	17	83	189
12	1165	9.5	17	83	206
AM	July 14				
1.00	1165	9.5	16.5	83	222
2.00	1165	9.5	17	83	237
3.00	1165	9.5	17	83	256
4.00	1165	9.5	17	83	273
5.00	1165	9.5	17	83	290
6.00	1165	9.5	16.5	84	307
7.00	1165	9.5	16.5	84	323
8.00	1165	9.5	17	83	340
9	1175	9.5	16.5	80	356
10	1165	9.5	17.0	80	373
11	1165	9.5	17	80	390

45) 762 (17.
45
312
315

#8 Bath

July 14, 20.

Time	Sp. Gr	Volts	Amps	Temp	Total	390
12	1165	9.5	17	80	407	
1 PM	1165	9.5	16.5	80	423	
2.00	1165	9.5	17	80	440	
3.00	1165	9.5	17.5	87	457	
4	1165	9.5	17	85	474	
5	1165	9.5	16.5	85	490	
6	1165	9.5	16.5	85	507	
7	1165	9.5	16.5	85	523	
8	1165	9.5	17.5	85	540	
9	1165	9.5	17.5	85	558	
10	1165	9.5	17	83	575	
11	1165	9.5	17	83	592	
12	1165	9.5	17	83	609	
	July 15, 20					
1 PM	1165	9.5	17	83	626	
2.00	1165	9.5	17	83	643	
3.00	1165	9.5	17	83	660	
4.00	1165	9.5	17	81	677	
5.00	1165	9.5	17	81	694	
6.00	1165	9.5	17	81	711	
7.00	1165	9.5	17	81	728	
8.00	1165	9.5	17	81	745	
9	1165	9.5	17	81	762	Cent.

Taken from #2 Nickel 10 P.M. July 15, at 8.4 amps
Freshening in Nickel Bath
Put in wet, removed 1 minute no current, then full current on.
Put into Copper Bath dry with full current on.

Total amps = 660
" hours = 36
Average amps = 18.3

8 Bath

July	Started Hr	Volts	Amps	Amps	Total	
10 PM	1165	9.5	18.0	92		
11	1165	9.5	19.5	92	19	
12	1165	9.5	19.5	90	39	
	July 16		20			
1	1165	9.5	19	90	58	
.00	1165	9.5	19	[illegible]	77	
.00	1165	9.5	[illegible]	[illegible]	95	
.00	1165	9.5	[illegible]	[illegible]	4	
.00	1165	9.5	[illegible]	[illegible]	[illegible]	Transfered from
.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	#2 Ni bath
.00	1165	9.5	19	[illegible]	[illegible]	July 15 20.
.00	1165	9.5	18.5	90	189	Total amps 84
9	1170	9.5	19	87	208	Ni Plated
10	1165	9.5	19	96	227	
11	1165	9.5	19	91	246	
12	1165	9.5	18.5	96	264	
1	1165	9.5	19.5	89	284	
2	1165	9.5	19.5	90	303	
3	1165	9.5	19.5	94	323	
4	1165	9.5	19.5	96	341	
5	1165	9.5	18.5	90	360	
6	1165	9.5	17.5	90	377	
7	1165	9.5	17.5	88	395	
8	1165	9.5	17.5	88	412	
9	1165	9.5	18.	88	430	

36) 660 / 18.3
36
300
288
120
108
12

#8 Batt.

Time	Specific	Volts	Amps	Temp	Total
10AM	1165	9.5	18	88	448
11	1165	9.5	18	89	466
12	1165	9.5	18	89	484
	July 17, 20.				
1AM	1165	9.5	17.5	90	501
2	1165	9.5	17.5	90	519
3	1165	9.5	17.5	90	536
4	1165	9.5	17.5	90	554
5	1165	9.5	17.5	90	571
6	1165	9.5	17.5	90	589
7	1165	9.5	17.5	90	606
8	1165	9.5	17.5	90	624
9	1165	9.5	18	93	642
10	1165	9.5	18.5	93	660

Quit

Rev. 60 min in then full current on.

Taken from No 2 Nickel bath 8:00 P.M. July 17-20

Put in No 8 Bath. Dry with full current on

After 10 min in Ni Bath shows copper colour disc.

Cracked on edge of mould after 3 hours in plated.

Bath 8

July 17-20 PM	Sec	Volts	Amps	Amps	Total	
00	1170	9-5	17-5	98		
1	1170	9-5	17-5	98	17	
0	1170	9-5	18	90	35	
1	1170	9-5	18	89	53	
2	1170	9-5	18	92	71	
AM	July 18					
00	1170	9-5	19	92	90	
1:00	1170	9.5	19	92	109	
3:00	1170	9.5	19-5	92	129	
4:00	1170	9.5	18	92	147	
5:00	1170	9.5	18	92	165	
6:00	1170	9.5	17-5	90	182	Transfered from # 2 Ni Bath July 17,20 8 PM. 77 amps in bath
7:00	1170	9.5	17-5	90	200	
8:00	1170	9.5	17-5	90	217	
9:00	1170	9.5	17-5	90	235	
10	1170	9-5	17-5	90	253	
11	1170	9-5	17-5	90	270	
12	1170	9-5	17-5	98	288	
PM 1:00	1170	9-5	18	92	306	
2	1170	9-5	18	92	324	
3	1170	9-5	18	92	342	
4	1170	9-5	19	94	361	
5	1170	9-5	19	94	380	
6	1170	9-5	19	94	399	
7	1170	9-5	19	94	418	

42 / 736 / 17.5

42
316
294
21
00

Total Amps 736
" hours 42
Average Amps 17.5

Bath 8

July 18

PM	Ohm	Volts	Amp	Temp	Total
8	1170	9.5	18	94	436
9	1170	9.5	17.5	90	453
10	1170	9.5	17	90	470
11	1170	9.5	17	90	487
12	1170	9.5	17	90	504
AM	July 19				
1	1170	9.5	17	90	521
2	1170	9.5	16	[illegible]	[illegible]
3	1170	9.5	16	[illegible]	[illegible]
4	1170	9.5	16	[illegible]	[illegible]
5	1170	9.5	16.5	[illegible]	[illegible]
6	1170	9.5	16.5	[illegible]	[illegible]
7	1170	9.5	16.5	[illegible]	9
8	1170	9.5	16.5	90	635
9	1170	9.5	16	90	651
10	1170	9.5	16	90	667
11	1165	9.5	16	90	683
12	1165	9.5	17	94	700
1 PM	1165	9.5	18	94	718
136	1165	9.5	18	92	736

Cut

of Copper strips

Start of exper. Numbers.

A = air
A-B = Copper.

Date	Time	Stroke	Volts	amps.	Copper	1	2	3	4	5	6	7	8
						COPPER BATHS							
	10 PM	11.5	9.5	666 (15.7)	1AB							13.5 1AB / 15 2AB	
	10 PM	11.5	9.5	648 (18.9)	2AB							14	15.5
	12 "	"	"	626 (17.5)	3AB		13 3AB					28	30
	2:30	"	"	720	4AB		13				15 4AB	42	46
		"	"		5AB		26				15	56	62
		"	"		~~6AB~~		40				30	70	79
		"	"		7AB		54				48	84	96
		"	"		8AB		68		18 8AB		63	98	114
	PM	"	"		9AB		82	17.5 9AB	17		78	112	132
		"	"		10AB		96	18	32		96	126	[illegible]
		"	"		11AB		110	36	48		114	140	168
							124	54	64		132	154	186
							138	72	79		140	169	204
							152	90	95		158	183	222
							167	105	111		175	198	240
							182	121	172		192	213	258
							196	135	190		209	228	275
							210	153	208		226	243	292
							225	171	224		243	258	309
							240	189	240		261	273	326
							256	206	256		278	289	344
	7	11.5	9				274	224	273		294	305	361
	8:00						293	242	289		311	321	379
	9:00	"	"				312	260	305		328	338	397
	10						332	279	321		345	355	

Copper #10

42) 626.0 (14.9
42xx
2068
1868
378

	Time	Slw	Volts	Amp	Exp		COPPER BATHS 2	3	4	5	6	7	8
					1AB	✓						371	
		1170	9.5		2AB	✓	~~3AB~~					388	435
		"	"		3AB	✓	349				4AB	406	457
		"	"		4AB		365				362	423	474
		"	"		5AB		381				379	44	
		"	"		~~6AB~~	✓	396				396	458	
		"	"		7AB		411		8AB		414	476	
					8AB		421	9AB	340		432	494	552
					9AB		441	298	358		452	502	
					10AB	✓	456	318	377		472	519	589
					11AB		471	338	396		492	536	608
					12AB		486	357	414		512	553	628
					13AB		501	376	432		532	573	648
					14AB		516	395	451		552	592	Out
42	12AM	1170	9.5		5AB		532	415	July 22		570	612	15
			10		15AB	✓	547	435	470		586	630	15
					16AB	✓	563	July 22	490		July 22	648	30
					17AB	✓	579	455	510		603	666	46
							595	475	530		621	Out	61
							602	495	550		636		77
							618	479	571		655		92
							626	499	593		67		109
							Out	467	613		65		125
								485	632		104		
								503	651		720		

Lid Out

25 hours reading on next page.

Thursday July 22, 20

added 1000 cc H_2SO_4

to Copper Baths

July 23 at 3-30 AM had to shut down on account of tube bursting. Lost considerable amount of solution. Started again at 5.55 AM.

Copper baths

Date	Time	Sp Gr	Volts	Amps	Temp		4AB	8AB	4AB	5AB
21	8 PM	1170	10	17.5	86		520	670	720	141
							538	out	out	157
							556			174
							575			
							594			
							613			
							632			
							out			
July 22, 20										
	4	1170	9.5	18	90					
	5	1175	9.5	18	85					
	6									
	7									
	8									
	9									

4AB	8AB	4AB	5AB
446			
485			
504			
524			
524			
564			
July 22			
584			
603			
622			
639			
646			
665			
684			324
703			360
722			376
740			392
out			408
			424
			440
			458
			476

July 22 Copper Butts

Time	Sgr	Vols	Am	Term	Bath	1	2	3	4			Batt #8
12PM	1170	9.5		83								5AB

659
678
691
710
728
737

45 / 737 / 16.3

July 23 3 P.M. Out

Inerted discs
Regular Process Copper Bath
Wet, full current on

#7 Bath

11 Rubber Varnish

Started July 21, @ 5 P.M.

TIME	Sp. Gr.	TEMP.	Volt	AMP	TOTAL	
5 P.M.	1170	83	10.	16		
6	"	86	"	17	16	
7	"	86	"	18	34	
8	"	84	"	17.5	51	
9	"	84	"	17.5	69	
10	"	84	"	17.5	86	
11	"	82	"	18	104	
12	"	82	"	17.5	122	
AM	July-22-AM					
1:00	"	82	"	17.5	139	
2.00	"	80	"	18	157	
3.00	"	80	"	18	175	
4.00	"	80	"	18	193	
5.00	"	80	"	18	211	
6.00	"	82	"	18	229	
7.00	"	82	"	18	247	
8.00	"	82	"	18	265	
9	"	82	"	17.5	282	
10	"	82	"	17.5	300	
11	"	85	"	17.5	317	
12	"	83	"	17.5	335	added 100 cc
1	"	85	"	17.5	352	H_2SO_4 to Bath
2	"	"	"	17.5	370	
3	"	"	"	17.5	387	
4	"	90	9.5	18.	405	change to 9.5 Volt

#7 Bath

#11 Rubber Varnish

9.22.30 TIME	Sp. Gr.	TEMP.	Volt	Amp	TOTAL	
12 PM	1175	85	9.5	17	420	Sequestering. Field burnt out
200	1170	83	9.5	18	440	
1 M	July	23-	26			
00	1170	83	9.5	18	458	
00	1170	83	9.5	18	476	
00	1170	82	9.5	19	495	
00	1170	82	9.5	19	514	
00	1170	80	9.5	19	533	
00	1170	80	9.5	17	552	
00	1170	82	9.5	18	570	
00	1170	82	9.5	18	588	
—	1170	83	9.5	18	606	
10	"	85	"	19.5	625	Cut Out

35)625/18

35 × 625 = 275 / 280 / 5

Total amps 625
hours 35
Average amps 18

2 Bath

Expt 7.A-B

Started July. 21, 20-6 PM

Time	Sp gr	Temp	Volts	Amp	Total	
6 PM.	1170	86	10	17.5		
7	1170	86	"	17.5	17	
8	"	84	"	17-5	35	
9	"	84	"	17-5	52	
10	"	84	"	17-5	70	
11	"	82	"	17-5	88	
12	"	82	"	18	96	
	July - 22 - AM					
1.00	"	82	"	18	114	
2	"	80	"	18	132	
3	"	80	"	18	150	
4	"	80	"	18	168	
5	"	80	"	18	186	
6	"	82	"	18	204	
7	"	82	"	18	222	
8	"	82	"	18	240	
9	1175	83	"	17.5	257	
10	"	85	"	17.5	275	
11	1170	85	"	16.5	291	
12	1170	83	"	16.5	308	added 1000 cc
1 PM	1170	85	10	16.5	324	H_2SO_4 to
2	1170	85	10	16.5	341	bath
3	"	"	"	16.5	357	
4	1170	90	9.5	17.5	375	change to 9.5 Volt
5	1175	85	"	16.5	391	

#2 Bath

Exp 7-A-B.

July 22, 20.

TIME	Sp. Gr.	Tamps	Volt	Amps	Total	
12:00	1170	83	9.5	17	408	Shut down. Full blow out.
AM	July	23-20				
1.00	1170	83	9.5	17	425	
2.00	1170	83	9.5	17	442	
3.00	1170	82	9.5	17.5	[illegible]	
4.00	1170	82	9.5	17.5	[illegible]	
5.00	1170	80	9.5	17	[illegible]	
6.00	1170	80	9.5	17	[illegible]	
7.00	1170	82	9.5	16.5	527	
8.00	1170	82	9.5	16.5	544	
9	1170	83	9.5	16.5	560	
10	"	85	"	18	578	
11	"	82	"	24	602	
12	"	82	"	18.5	621	
1PM	"	83	"	19	640	
2	"	"	"	19	659	
3	"	"	"	18.5	677	Cut out

Total Amps 677
" hours 39
Average Amps 17.3

39) 677 (17.3
39
287
273
140

Treated this.
Hot, full current on

6 Bath

#12 Rubber Varnish.

Started July 22, 20 at 10 AM.

Time	Sp Gr	Temp	Volts	Amps	Total
10 AM.	1175	85	10	17	
11	1170	85	"	17	17
12	1170	83	"	17	34
1 PM.	"	85	"	17	51
2	"	"	"	16.5	67
3	"	"	"	17	84
4	1170	90	9.5	20	104 Change to 9.5 Volt
5	1175	85	"	18.5	123
6					Field Burnt out Shut down
7					
8					
9					
10					
11					
12	1170	83	9.5	17	
July 23 20.					
1 AM	1170	83	9.5	17	
2	1170	83	9.5	19	
3	1170	82	9.5	19.5	
4	1170	82	9.5	19.5	
5	1170	80	9.5	20	
6	1170	80	9.5	20	
7	1170	82	9.5	21	280
8	"	"	"	21	301
9	"	83	"	20	321

Shut down at 5-50 power off Started at 6, oclock.

Shut down again at 6-55 started 6-15.

395 / 75 / 39 / 36 / 35 / 55 / 75 / 19

#6 Bath

#12 Rubber varnish

Time	Sp.gr.	Temp	Volt	Amps	Total	321
10AM	1170	85	9.5	21	342	
11	"	82	"	21	363	
12	"	82	"	21	384	
1PM	"	82	"	22	406	
2	"	"	"	21.5	427	
3	1165	83	"	22	449	
4	"	83	"	21.5	471	
5	"	84	"	21.5	492	
6	"	84	"	20	512	
7	"	83	"	19	531	
8	"	82	"	19	550	
9	"	82	"	19	569	
10	"	84	"	19	588	
11	"	84	"	19	607	
12	"	84	"	19	626	
July 24, 20.						
1.00	"	85	"	19	645	
2.00	"	84	"	19	664	
3.00	"	82	"	18	682	
4.00	"	82	"	18	700	
5.00	"	80	"	18	718	
6.00	"	80	"	18	736	
7.00	"	80	"	17	753	
7.30	"	80	"	17	758	Out

1st time in

Treated this a
Wet, full current on.

#5 Bath

#13. Rubber Varnish

Started July 22, 20 @ 11 A.M.

Time	Sp.gr.	Temp.	Volts	Amps	Total	
11 A.M.	1170	85	10	19		
12	"	83	"	19	19	X added 1000cc
1 P.M.	"	85	"	19	38	H2SO4 to
2	"	"	"	19	57	Copper baths
3	"	"	"	19	76	
4	"	90	9.5	23	99	X change to 9.5 Volts
5	1175	85	"	21.5	120	
6						Field burnt out Shut down
7						
8						
9						
10						
11						
12	1170	83	9.5	22	142	
July 23, 20						
1 A.M.	1170	83	9.5	22	164	
2	1170	83	9.5	22	186	
3	1170	82	9.5	23	209	
4	1170	82	9.5	23	232	
5	1170	80	9.5	23	255	
6	1170	80	9.5	23	278	
7	1170	82	9.5	23	301	
8	"	"	"	23	324	
9	"	83	"	22	346	
10	"	85	"	25	371	

33 / 750 / 66 / 90 / 66 / 240 / 231 / 227

#5 Bath

#13 Rubber Varnish

TIME July 23	Sp Rate	TEMP	Volts	amp	Total	371
11 AM	1170	82	9.5	24	395	
2	"	"	"	24	419	
1 PM	"	"	"	25	444	
2	"	"	"	25	469	
3	1165	83	"	25	494	
4	"	"	"	24	518	
5	"	84	"	24.5	542	
6	"	84	"	24	566	
7	"	83	"	23.5	589	
8	"	82	"	23.5	613	
9	"	82	"	23.5	635	
10	"	84	"	23.5	659	
11	"	84	"	23.5	682	
12	"	84	"	23.5	706	
July 24						
11 AM	"	85	"	23.5	729	
200	"	84	"	21	750	Cut
300			"			

1st time in.

#4 Bath

#10 Rubber varnish 2nd time in

July 22, 20 at 11 AM.

Time	Sp. Gr.	Temp.	Volts	Amps	Totals	
11 AM	1170	85	10	21		
12 "	"	83	"	20	20	X
1 PM	"	85	"	20	40	
2	"	"	"	20	60	
3	"	"	"	21	71	
4	"	90	9.5	18.5	89	X Change to 9.5 Volts
5	1175	85	"	20	109	
6						
7						
8						
9						
10						
11						
12	1170	83	9.5	19	128	
July 23, 20,						
1 AM	1170	83	9.5	19	147	
2	1170	83	9.5	19	166	
3	1170	82	9.5	20	186	
4	1170	82	9.5	20	206	
5	1170	80	9.5	21	227	
6	1170	80	9.5	21	248	
7	"	82	"	21	269	
8	"	82	"	21	290	
9	"	83	"	21	311	
10	"	85	"	20	331	

Knocked on

1000 cc #250 added at noon

Field burnt out Shut down.

395) 747.9 (1.89
395
520
395
1250
1185
65

#4 Bath

#10 Rubber Varnish

TIME	Sp. Gr.	TEMP	Volts	Amps	Total 331
11 AM	1170	82	9.5	21	352
12	"	"	"	21	373
1 PM	"	"	"	21	394
2	"	"	"	19	413
3	1165	83	"	18.5	431
4	"	"	"	18.5	450
5	"	84	"	20	470
6	"	84	"	20	490
7	"	83	"	19	509
8	"	82	"	19	528
9	"	82	"	18	546
10	"	84	"	17.5	563
11	"	84	"	17.5	581
12	"	84	"	17.5	598
July 24					
1 AM	"	85	"	18	616
2	"	84	"	18	634
3	"	82	"	17	651
4	"	82	"	17	668
5	"	80	"	17	685
6	"	80	"	17	702
7	"	80	"	18	720
8	"	80	"	18	738
8:32	"	"	"	18	747

2nd time in bath

Cut out

#3 Bath

#14 Rubber Garnish

Start July 22, 20 at 3 P.M.

TIME	Stage	Temp	Volts	Amps	Temp	
3PM	1170	85	10	19		
4	"	90	9.5	19	19	* Changed to 9.5 Volts
5	1175	85	"	21.5	40	
6	1175		"	21.5	62	
12.00	1170	83	9.5	21	83	
AM	July	23-20				
1.00	1170	83	9.5	21	104	
2.00	1170	83	9.5	22	126	
3.00	1170	82	9.5	23	149	
4.00	1170	82	9.5	23	172	
5.00	1170	80	9.5	23	195	
6.00	1170	80	9.5	23	218	
7.00	1170	82	9.5	22	240	
8.00	1170	82	"	22	262	
9	"	83	"	22	284	
10	"	85	"	25	309	
11	"	82	"	24	333	
12	"	"	"	24	357	
1PM	"	"	"	24	381	
2	"	"	"	23	404	
3	1165	83	"	23.5	427	
4	"	"	"	22	449	
5	"	84	"	23.5	473	
6	"	84		22	495	

355 / 792 / 710 / 820 / 710 / 10 / 22

3 Bath

#14 Rubber Varnish

TIME	Sp. Gr.	TEMP	Volts	Amps	Total
7 PM	1.66	83	9-5	22	517
8	"	82	"	22	539
9	"	82	"	22	561
10	"	84	"	22.5	583
11	"	84	"	22.5	606
12	"	84	"	22.5	628
	July		24		
1.00	"	85	"	23	651
2.00	"	84	"	22	673
3.00	"	82	"	23	696
4.00	"	82	"	23	719
5.00	"	80	"	21	740
6.00	"	80	"	21	761
7.00	"	80	"	21	782
7.30	"	80	"	21	792

1st time in Bath

Cut out

N. G.

Too many bubbles

#7 Bath Rubber varnish #17.

July 23, 20 at 1030 AM.

TIME	Spd. Dn	TEMP	Volts	Amps	Total	
10 30 AM	1170	85	9.5	19.5		Looks best coat yet glassy surface
1 30	"	82	"	19	19	
12 30	"	82	"	19	38	
1 30 PM	"	"	"	19	57	
2 30	"	"	"	20	77	
3 30	1165	83	"	20.5	97	
4 30	"	"	"	21	119	
5 30	"	84	"	19.5	138	
6 30	"	83	"	19.5	158	
7 30	"	82	"	19	177	
8 30		82	"	18	195	
9 30		84	"	17.5	212	
10 30	"	84	"	17.5	230	
11 30	"	84	"	17.5	247	
12 30	"	84	"	17.5	265	
July 24 20.						
1 30 AM	"	85	"	18	283	
2	"	84	"	17	300	
3	"	82	"	17.5	317	
4	"	82	"	17.5	335	
5	"	80	"	17.5	352	
6	"	80	"	17.5	370	
7	"	80	"	16	386	
8	"	80	"	16	402	
9	"	78	"	16.5	418	

#7 Batt.

Rubber Varnish #17

July 24 TIME	Sp Gr	TEMP	Volts	Amps	Total	4/8
10 AM	1170	80	9.5	16	434	
11	1170	"	"	16.5	451	
12	"	"	"	17	468	
1 PM	"	"	"	17.5	485	
2	"	"	"	17	502	
3	"	"	"	17.5	520	
4	1165	84	9.5	17.5	537	
5	"	"	"	17	554	
6	"	"	"	17	571	
7	"	"	"	17	588	
8	"	80	"	17	605	
9	"	80	"	16.5	621	621
10	"	80	"	16.5	638	643
11	"	80	"	16.5	654	
12	1170	80	"	16.5	670	
July 25, 20						
1 AM	"	80	"	17.5	688	
2 "	"	80	"	17.5	705	
3	"	81	"	17.5	722	
4	"	81	"	17	739	
5	"	81	"	17	756	Out

1st time in

Tube lug loosened from mold. — J

17.5

1.43 / 1.26 / 3.00 / 2.55 / 2.21

#2 Bath

Rubber Varnish #15

Started July 23, 20. 3. P.M.

TIME	Speed	Temp	Volts	Amps	Total	
3. P.M.	1165	83	9.5	18.5		
4	"	"	"	18.5	18	
5	"	84	"	17.5	36	
6	"	84	"	17.5	53	
7	"	83	"	17.5	71	
8	"	82	"	17	87	
9	"	82	"	17	104	
10	"	84	"	17	121	
11	"	84	"	17	138	
12		84	"	17	155	
July 24, 20.						
100	"	85	"	17	172	
200	"	84	"	16	188	
300	"	82	"	16	204	Noticed splitting
400	"	82	"	16	220	Moulded a 3-30
500	"	80	"	16	236	
600	"	80	"	16	252	
700	"	80	"	15	267	
800	"	80	"	15	282	
9	1170	"	"	15.5	297	
10	"	"	"	15.5	303	
11	"	"	"	16	319	
12	"	"	"	15.5	334	
1 A.M.	"	"	"	16.	350	
2	"	"	"	16.5	367	

Note: Knobs on rubber very plentiful. Removed by blades after error highly fr a stripper while grafting. (PBL)

4/24/29 4/25/29 4/26/29 4/29/29

#2 Bath

Rubber Varnish #15

TIME	Sp. Grav.	TEMP.	Volts	Amps	Total	
3	1170	80	9.5	16	383	
4	1165	84	9.5	16	399	
5	"	"	"	16	415	
6	"	"	"	16	431	
7	"	"	"	16	447	
8	"	80	"	16	464	
9	"	80	"	16	479	
10	"	80	"	16	495	
11	"	80	"	16	511	
12	"	80	"	16	527	
July 25, 1930						
1 AM	1170	80	"	16	543	
2	"	80	"	15	558	
3	"	81	"	15	573	
4	"	81	"	15	588	
5	"	82	"	15	603	533
6	"	82	"	15	618	
7	"	82	"	15	633	
8	"	81	"	15	648	
9	"	81	"	16	664	
10	"	"		16	680	
11	"	"	"	16	696	
12	1165	"	"	17	713	
1 PM	"	"	"	17	730	
2	"			17	747	

Cut time in.

Cut out accounts of hi stripping from face of hanger.

Cut

8 Bath:

Rubber Varnish #16

July 23, 20. at 3. P.M.

TIME	Speed	TEMP.	Volts	Amps	Total
3 P.M.	1165	83	9.5	18.5	
4	"	"	"	18.5	18
5	"	84	"	17.5	36
6	"	84	"	17.5	53
7	"	83	"	17.5	70
8	"	82	"	17	87
9	"	82	"	17	104
10	"	84	"	16.5	120
11	"	84	"	16.5	137
12	"	84	"	16.5	153
July 23, 20.					
1 A.M.	"	85	"	16.5	170
2.00	"	84	"	16	186
3.00	"	82	"	16	202
4.00	"	82	"	16	218
5.00	"	80	"	16	234
6.00	"	80	"	16	250
7.00	"	80	"	15.5	265
8.00	"	80	"	15.5	281
9	1170	"	"	16	297
10	"	"	"	16	303
11	"	"	"	16	319
12	"	"	"	16.5	335
1 P.M.	"	"	"	17	352
2	"	"	"	16.5	368

47 / 758 / 16.1
14 x 6
284
282 / 60

8 Bath

Rubber varnish #16

TIME	Sp Gr.	TEMP	Volts	amps	Total
3	1170	80	9.5	17	385
4	1165	84	9.5	16.5	401
5	"	"	"	16.5	418
6	"	"	"	16.5	434
7	"	"	"	16.5	450
8	"	80	"	16.5	467
9		80		16.5	483
10	"	80	"	16.5	500
11	"	80	"	16.5	516
12	1170	80	"	16.5	533
July 25		1970			
1 AM	"	80	"	16.5	549
2	"	80	"	16	565
3	"	81	"	15.5	581
4	"	81	"	15.5	596
5	"	82	"	15.5	612
6	"	82	"	15.5	627
7	"	82	"	15.5	643
8	"	81	"	15	658
9	"	"	"	16.5	674
10	"	"	"	16.	690
11	"	"	"	17	707
12	1165	"	"	16.5	724
12.5	"	"	"	17.	741
2	"	"	"	17	758

Out

1st time in

July 26

Shut Down 5-15 AM until 5 45 AM Had to clean brushes on motor. Brushes were covered with oil.

Stopped 6.45 for ten min: Shaft was loose.

#4 Bath

Rubber varnish #10 —

Started July 24, 20. at 11 AM.

3rd time in

TIME	Sp. Dev	TEMP	Volts	Amp	Total
11 AM	1170	80	9.5	17	
12	"	"	"	16.5	16.
1 PM	"	80	9.5	16	32
2	"	"	9.5	18	50
3	"	"	9.5	19	69
4	1165	84	9.5	19	88
5	1165	"	9.5	19	107
6	"	"	"	19	126
7	"	"	"	19	145
8	"	80	"	19	164
9	"	80	"	18	182
10	"	80	"	18	200
11	"	80	"	18	[illegible]
12	1170	80	"	18	[illegible]
July 25					
1 AM	1170	80	"	15	[illegible]
2	"	80	"	16	[illegible]
3	"	81	"	15	[illegible]
4	"	81	"	15	[illegible]
5	"	82	"	15	315
6	"	82	"	15	330
7	"	82	"	15	345
8	"	81	"	15	357
9	"	"	"	15	374
10	"	"	"	15	389

4) 234 / 16.
2 46

#4 Bath

Rubber Varnish #10

TIME	Sp. Gr	TEMP	Volts	Amps	Total	
11	1170	81	95	15	404	3rd time in
12	1165	"	"	16	420	
1 PM	"	"	"	16	436	
2	"	"	"	16	452	
3	"	"	"	16	468	
4	"	"	"	15	483	
5	"	"	"	15	498	
6	"	"	"	15	513	
7	"	"	"	15	528	
8	"	"	"	15	528	
9	"	"	"	15	543	
10	"	"	"	15	558	
11	"	"	"	15	573	
12	"	"	"	15	588	
	July 26 -					
1 AM	"	"	"	16	604	
2	"	83	"	16	620	
3	"	83	"	16	636	
4	"	81	"	17	653	
5	"	81	"	17	670	
6	"	"	"	16	686	
7	1165	82	"	15	701	
8	"	83	"	16.5	717	
9	"	83	"	16.5	734	Out

First time in

#6 Batt

Rubber Varnish #12

started July 24, 20. at 11 AM.

2nd time in

TIME	Sp Gr	TEMP	Volts	Amps	Total
11 AM	1170	80	9.5	16	
12	"	"	"	18	18
1 PM	"	"	"	19	37
2	"	"	"	18.5	55
3	"	"	"	18.5	74
4	1165	84	"	18	92
5	"	"	"	18	110
6	"	"	"	18	126
7	"	"	"	18	144
8	"	80	"	18	162
9	"	80	"	18	180
10	"	80	"	18	198
11	"	80	"	18	216
12	1140	80	"	18	234
July 25, 20					
1 AM	"	80	"	18	252
2	"	80	"	18	270
3	"	81	"	17.5	287
4	"	81	"	17.5	305
5	"	82	"	17.5	322
6	"	82	"	17.5	340
7	"	82	"	17.5	357
8	"	81	"	17	374
9	"	"	"	17	391
10	"	"	"	17	408

42 / 7.58 / 4.2 / 3.36 / 3.3 / 18.

#6 Bath

Rubber Varnish #12

TIME	Sp. Gr	TEMP	Volts	amps	Total	
11	1170	81	9.5	19	427	2nd time in
12	1165	"	"	18.5	445	
1 PM	"	"	"	18.5	464	
2	"	"	"	18.5	482	
3	"	"	"	18.5	501	
4	"	"	"	18-5	519	
5	"	"	"	18-5	538	
6	"	"	"	18-5	558	
7	"	"	"	18	574	
8	"	"	"	18	592	
9	"	"	"	18	610	
10	"	"	"	18	628	
11	"	"	"	18	646	
12	"	"	"	18	664	
July 26						
1	"	"	"	19	683	
2	"	"	"	19	702	
3	"	83	"	19	721	
4	"	83	"	19	740	
5	"	81	"	18	758	Out
6						
7						
8						
9						
10						

Out

Rubber Varnish #12

#5 Batch

Rubber Varnish

Started July 24 20. at 11 AM. #13

TIME	Sp. Gr	TEMP	Volts	Amps	Total	Recon of time
11 AM	1170	80	9.5	19		
12	"	"	"	21	21	
1 PM	1165	84	"	21	42	
2	"	"	"	22	64	
3	"	"	"	22	86	
4	"	"	"	21.5	107	
5	"	"	"	21	128	
6	"	"	"	21.5	150	
7	"	"	"	21.5	171	
8	"	80	"	21.5	193	
9	"	80	"	21	214	
10	"	80	"	21	235	
11	"	80	"	21		
12	1140	80	"	21		
July 25 20.						
1 AM	1170	80	"	21		
2	"	80	"	22		
3	"	81	"	22		
4	"	81	"	22		
5	"	82	"	22		
6	"	82	"	22		
7	"	82	"			
8	"	81	"	22		
9	"	81	"	24	523	
10	"	81	"	24	547	

31 / 7 4 / 162 / 27 / 12 / 24

#5 Bath

Rubber Varnish
#13

TIME	Sp Gr	TEMP	Volts	Amp	Total	
11	1170	81	9.5	25	572	
12	1165	"	"	25	597	
1PM	"	"	"	25	622	
2	"	"	"	25	647	
3	"	"	"	25	672	
4	"	"	"	25	697	
5	"	"	"	25	722	
6	"	"	"	25	747	Cut
4	"					

2nd time

8 Bath. Rubber varnish #16

Started July 25, 20 4 PM

TIME	Sp. Gr.	TEMP	Volts	Amps	Total Amp.	
2 PM	1160	80	9.5	15.5		Rubber varnish #16 2nd time in Mixer
5	"	"	"	16.5	15	
6	"	"	"	15-5	31	
7	"	"	"	15-5	46	
8	"	"	"	15-5	62	
9	"	"	"	16	78	
10	"	"	"	16	94	
11	"	"	"	16	110	
12	"	"	"	16	126	
	July 26					
1.00	1165	"	"	16-5	142	
2.00	"	"	"	16-5	159	
3.00	"	83	"	17	176	
4.00	"	83	"	17	193	
5.00	"	81	"	16-5	209	
6.00	"	81	"	16-5	226	
7.00	"	"	"	17	243	
8	"	82	"	17	260	
9	"	83	"	17	277	
10	"	"	"	17	294	
11	"	"	"	17	301	
12	"	80	"	17	318	
1	1170	80	"	17.	335	
2	"	"	"	16.5	351	
3	"	"	"	16.5	368	23 hrs

Second time

4) 744 ex / 15.8
147
274
285
396
337

8 Batt 16 Rubber
2 mar Varnish
time

July 26, 20 Hill	Sp Gr	Volts	Temp	Amps	Total	
4 PM	1170	9.5	80	16	384	2nd time in
5	"	"	"	16	400	
6	"	"	"	16	416	
7	"	"	"	16	432	
8	"	"	"	16.5	448	
9	"	"	"	16.5	465	
10	"	"	"	16.5	481	
11	"	"	"	16.5	498	
12	1170	"	"	16.5	514	
July 27, 20						
1 AM	"	"	"	16.5	531	
2	"	"	83	16	547	
3	"	"	83	16	563	
4	"	"	"	16	579	
5	"	"	"	16	595	
6	"	"	"	16	611	
7	"	"	"	16	627	
8	"	"	"	16	643	
9	"	"	"	16	659	
10	"	"	"	16	675	
11	"	"	"	16	681	
12	"	"	"	16	697	
PM	"	"	"	16	713	Knobs taken off before 3rd time in
PM	"	"	"	16	729	
	"	"	"	16	744	Out

5 Bath Rubber varnish #13

Started July-25 - 6 P.M.

Time	Lbs	Volts	Temp	Amps	Total
6 PM	1165	9-5	80	21	
7	"	"	"	21	21
8	"	"	"	21	42
9	"	"	"	21	63
10	"	"	"	21	84
11	"	"	"	21	105
12	"	"	"	21	126
	July-26				
100	"	"	"	22	148
200	"	"	"	22	170
300	"	"	83	22	192
400	"	"	83	21	213
500	"	"	81	21	234
600	"	"	81	21	255
700	"	"	"	21	276
800	"	"	82	21	297
9	"	"	83	22	319
10	"	"	83	22	341
11	"	"	"	22	363
12	"	"	80	22	385
1	1170	"	"	22	407
2	"	"	"	22	429
3	"	"	"	22	451
4	"	"	"	22	473
5	"	"	"	22	495

Bad time AM

38 / 85 / 26 / 96 / 1,50 / 1,52 / 22.4

#5 Bath Rubbermaid #13

TIME	Sp Gr	TEMP	Volts	Amps	Total	3rd time
July 26,20 8PM	1170	80	9.5	22.5	517	
7	"	"	"	25	542	
8	"	"	"	25	567	
9	"	"	"	25	592	
10	"	"	"	25	617	
11	"	"	"	23	640	
12	1170	"	"	23	663	
July 27,20 9AM	"	"	"	23	686	
2	"	83	"	22.5	719	
3	"	83	"	22.5	741	
4	"	"	"	22.5	764	
5	"	"	"	22.5	786	
6	"	115	"	21.5	808	
7	"	"	"	21.5	829	
8	"	"	"	21.5	851	

3rd time out

Cut out

#6 Bath

Rubber Varnish #12

Started July 26, 20 12 AM.

TIME	S.G.	TEMP	Volts	Amps	Total	
12 AM	1165	80	9.5	18.5		3rd time in was recoated before put in bath!
1	1170	80	"	18.	18	
2	"	"	"	18.	36	
3	"	"	"	18.5	55	
4	"	"	"	18.5	73	
5	"	"	"	18.5	92	
6	"	"	"	18.	110	
7	"	"	"	19	129	
8	"	"	"	19.5	148	
9	"	"	"	19.5	168	
10	"	"	"	19.5	187	
11	"	"	"	19	[illegible]	
12	1170	"	"	18.5	[illegible]	
July 27, 20, AM.	"	"	"	18.5	243	
2	"	83	"	18	[illegible]	
3	"	83	"	18	[illegible]	
4	"	"	"	18	287	
5	"	"	"	18	305	
6	"	"	"	18	323	
7	"	"	"	18	341	
8	"	"	"	18	359	
9	"	"	"	18	377	
10	"	"	"	18	395	
11	"	"	"	19	414	

44) 815 × 18.5 / 44 / 375 / 352 / 230 / 220

#6 Bath

Rubber varnish #12

July 27, 20

TIME	Sp Gr	Temp	Volts	amps	Total time	3rd time in was recovered before put in bath!
12	1170	80	95	19	43 3rd	
1 PM.	"	"	"	18	461	
2	"	"	"	19	480	
3	"	"	"	19	499	
4	1165	82	"	19	518	
5	"	"	"	19	537	
6	"	"	"	19	556	
7	"	"	"	19	575	
8	"	"	"	19	[illegible]	
9	"	"	"	19	[illegible]	
10	"	83	"	18.5	[illegible]	
11	"	"	"	18.5	[illegible]	
12	1170	"	"	17	[illegible]	
July 28, 20.						
AM	"	"	"	17	[illegible]	
2	"	"	"	17	[illegible]	
3	"	"	"	17	[illegible]	
4	"	"	"	17	745	
5	"	"	"	17.5	762	
6	"	80	"	17.5	[illegible]	
7	"	"	"	[illegible]	[illegible]	
8	"	"	"	17	815	Out

#4 Batt

Rubber Varnish #10

Started July 26, 20. at 12 A.M.

TIME	Kopp	Temp.	Volts.	Amps.	Total	
12 A.M.	1170	80	9.5	16.5		4th time in knob taken off and recoated
1 P.M.	"	"	"	16.5	16	
2	"	"	"	16.5	31	
3	"	"	"	16.5	47	
4	"	"	"	17	64	
5	"	"	"	17	81	
6	"	"	"	17	98	
7	"	"	"	16.5	114	
8	"	"	"	16	130	
9	"	"	"	16	146	
10	"	"	"	16	162	
11	"	"	"	17	179	
12	1170	"	"	17	196	
July 27, 20						
1 A.M.	"	"	"	17	216	
2	"	83	"	17	233	
3	"	83	"	17	250	
4	"	"	"	17	267	
5	"	"	"	17	284	
6	"	"	"	16	300	
7	"	"	"	16	316	
8	"	"	"	16	332	
9	"	"	"	16.5	348	
10	"	"	"	16.5	365	
11	"	"	"	17	382	

46) 753 × 16.3
46
293
276
170
138
32

4 Batt

Rubber Varnish
10

July 27, 20.

TIME	Sp. Gr.	Temp	Volts	Amps	Total	with time in
12	1170	80	9.5	17	399	Rubber taken
1 PM	"	"	"	16.5	405	off and recoate.
2	"	"	"	17	422	
3	"	"	"	17.5	440	
4	1165	82	"	17	457	
5	"	"	"	17	474	
6	"	"	"	17	491	
7	"	"	"	17	508	
8	"	"	"	17	[illegible]	
9	"	"	"	17	[illegible]	
10	"	83	"	16	[illegible]	
11	"	"	"	16	[illegible]	
12	1170	"	"	16	[illegible]	
July 28, 20						
1 AM	"	"	"	16	606	
2	"	"	"	16	[illegible]	
3	"	"	"	16	638	
4	"	"	"	16	654	
5	"	"	"	16	670	
6	"	80	"	17.5	[illegible]	
7	"	"	"	17.5	[illegible]	
8	"	"	"	17.5	722	
9	"	78	"	15.5	738	
10	"		"	15.5	753	Out

#3 Bath

Rubber Varnish #18

Started July 26, 20 at 4 P.M.

TIME	Spark	Temp	Volts	Amps	Total
4 PM	1170	80	9.5	22	
5	"	"	"	22	22
6	"	"	"	22	44
7	"	"	"	22	66
8	"	"	"	23	89
9	"	"	"	23	112
10	"	"	"	23	135
11	"	"	"	23	158
12	"	"	"	23	[illegible]
July 27 20.					
1 AM	"	"	"	23	[illegible]
2	"	83	"	23	[illegible]
3	"	83	"	23	[illegible]
4	"	"	"	23	[illegible]
5	"	"	"	23	[illegible]
6	"	"	"	23	[illegible]
7	"	"	"	23	[illegible]
8	"	"	"	23	[illegible]
9	"	"	"	23	388
10	"	"	"	23	411
11	"	"	"	23.5	434
12	"	"	"	23.5	458
1 PM	"	"	"	23	481
2	"	"	"	23	504
3	"	"	"	23	527

Left Tank in Start of Mirror [illegible]

39 / 8 9 / 22.8
2 / 11
28
30
312

#3 Bath

Rubber Varnish #18

July 27, 20.

TIME	Sp Gr	Temp	Volts	Amp	Total
4	1165	82	9.5	23	550 527
5	"	"	"	23	573
6	"	"	"	22	595
7	"	"	"	22	617
8	"		"	22	639
9	"	"	"	22	[illegible]
10	"	"	"	23	[illegible]
11	"	83	"	23	[illegible]
12	1170	"	"	23	[illegible]
July 28					
AM		"	"	23	[illegible]
2	"	"	"	23	[illegible]
3	"	"	"	23	[illegible]
4	"	"	"	23	[illegible]
5	"	"	"	23	[illegible]
6	"	80	"	23	[illegible]
7	"	"	"	23	[illegible]
8	"	"	"	23	

1 pt Varnish

Cut

#7 Bath — Rubber Varnish

Start July 26 20. 5. PM. — #17

TIME	Sp Gr	Temp	Volts	Amps	Total	
5. PM.	1170	80	9.5	17.5		2nd time in lug broke off and resoldered and mounted around the soldered lug.
6	"	"	"	17.5	18	
7	"	"	"	17.5	35	
8	"	"	"	18.5	54	
9	"	"	"	18.5	[illegible]	
10	"	"	"	18.5	71	
11	"	"	"	18.5	[illegible]	
12	"	"	"	18.5	[illegible]	
July 27, 20.						
1 AM.	"	"	"	[illegible]	[illegible]	
2	"	83	"	[illegible]	[illegible]	
3	"	83	"	[illegible]	[illegible]	
4	"	"	"	18	[illegible]	
5	"	"	"	17	[illegible]	
6	"	"	"	17.5	[illegible]	
7	"	"	"	17.5	[illegible]	
8	"	"	"	17.5	[illegible]	
9	"	"	"	18	288	
10	"	"	"	18	306	
11	"	"	"	18	324	
12	"	"	"	18	342	
1 PM	"	"	"	17.5	359	
2	"	"	"	17.5	377	
3	"	"	"	18	395	
4	1165	"	"	18	413	

43) 761 (17.7
43
331
301
300

7th Bath.

Rubber/Varnish #17

July 27, 20.

Min	Spedm.	Temp.	Volts	Amps.	Tempe
5 m.	1165	82	9.5	19	432
6	"	"	"	19	457
7	"	"	"	19	470
8	"	"	"	19	459
9	"	"	"	19	478
10	"	83	"	18	516
11	"	83	"	18	534
12	1170	"	"	17.5	551
July 27, 20					
1 AM	"	"	"	17.5	569
2	"	"	"	17.5	586
3	"	"	"	17.5	604
4	"	"	"	17.5	621
5	"	"	"	17.5	637
6	"	80	"	18	654
7	"	"	"	18	675
8	"	"	"	18	693
9	"	78	"	17	710
10	"	"	"	17	727
11	"	"	"	17	744
12	"	"	"	17	761

2nd time AM

Cut

2 Bath — Rubber Varnish #19

Started July 26, 20 at 6 P.M.

TIME	Sp. Gr.	Temp.	Volts	Amps	Total	
6 P.M.	1170	80	9.5	16.5		1st time in Edge of disc wiped with rubber
7	"	"	"	17	33	
8	"	"	"	18	51	
9	"	"	"	18	69	
10	"	"	"	18	87	
11	"	"	"	18	105	
12	"			"	123	
July 27, 20.						
1 A.M.	"		"	18	141	
2	"	83	"	17.5	158	
3	"	83	"	17.5	176	
4	"	"	"	17.5	193	
5	"	"	"	17.5	211	
6	"	"	"	17	228	
7	"	"	"	17	245	
8	"	"	"	17	262	
9	"	"	"	17.5	279	
10	"	"	"	17.5	297	
11	"	"	"	17	314	
12	"	"	"	17	331	
1 P.M.	"	"	"	17	348	
2	"	"	"	17	365	
3	"	"	"	17	382	
4	1165	82	"	17.5	399	
5	"	"	"	17.5	417	

43) 747 (17.3
43
317
31
160
129
31

#2 Bath

Rubber Varnish

#19

July 27. TIME	Sp. Gr	Temp	Volts	Amps	Total	
6 PM	1165	82	9.5	18	435	1st time in Edgewater chase wiped with rubber
7	"	"	"	18	453	
8.	"	"	9.5	18	471	
9	"	"	"	17	489	
10.	"	"	"	17	506	
11	"	83	"	18	524	
12	1170	"	"	16	540	
July 28 20.						
1	"	"	"	16	556	
2	"	"	"	16	572	
3	"	"	"	16	588	
4	"	"	"	16	604	
5	"	"		16	[illegible]	
6	"	80	"	15.5	636	
7	"	"	"	15.5	[illegible]	
8	"	"	"	15.5	667	
9	"	"	"	15	682	
10	"	"	"	16	698	
11	"	"	"	16	714	
12	"	"	"	16.5	730	
1 PM	"	"	"	16.5	747	Out

8 Batt

16 Rubber Varnish.

Started July 28, 20 at 10 AM.

TIME	Sp. Gr.	Temp.	Volts	amps	Tot.	
10 AM	1170	78	9.5	16		
11	"	"	"	17	17	
12	"	80	"	16	33	3rd time
1 PM	"	"	"	16	49	in. knobs were
2	"	"	"	16	65	taken off and
3	"	"	"	15.5	80	recoated.
4	"	82	"	15.5	96	
5	"	"	"	15.5	111	
6	"	"	"	16	127	
7	"	"	"	16	143	
8	"	"	"	16	[illegible]	
9	"	"	"	16	[illegible]	
10	"	83	"	16	[illegible]	
11	"	"	"	16	[illegible]	
12	"	"	"	16	223	
July 29, 20.						
1 AM	"	80	"	16	239	added one
2	"	"	"	16	255	gallon of dist.
3	"	"	"	16	271	water
4	"	"	"	16	[illegible]	
5	"	"	"	15	302	
6	"	"	"	15	317	
7	"	"	"	14.5	331	
8	"	"	"	14.5	346	
9	"	"	"	14.5	360	

~~Added one gallon~~

July 30 20

Added one gallon of alcohol: Water at 2 o'clock.

49 / 713 / 42 / 1.5.1 / 283 / 235 / 80

#8 Batch

Rubber Varnish #16

July 29

TIME	Sp Gr	Temp	Volts	Amp	Total
10 AM	1170	80	9.5	14.5	374
11	"	"	"	15	389
12	"	"	"	14.5	404
1 PM	"	"	"	14.5	418
2	"	"	"	14.5	433
3	"	"	"	14.5	447
4	"	82	9.	14.	461
5	"	82	9.5	14	475
6	"	83	"	14.5	489
7	"	"	"	14.5	504
8	"	"	9.5	14.5	518
9	"	"	"	14.5	533
10	"	"	"	14.0	547
11	"	"	"	14.5	562
12	"	"	"	14.5	576
July 30, 20					
1 AM	1170	80	"	14.5	591
2	"	"	"	14.5	605
3	"	40	"	15	620
4	"	"	"	15	635
5	"	"	"	15	650
6	"	"	9	15	665
7	"	"	"	16	681
8	"	"	"	16	697
9	"	"	"	16	713

Cut

#6 Bath

Rubber Varnish

Start July 28 20. 2 P.M. #12

TIME	Sp gr	TEMP	Volts	Amps	Total	
2 P.M.	1170	80	9.5	17		
3	"	"	"	17	17	
4	"	82	"	17	34	Recoated 2nd
5	"	"	"	17	51	time, fourth
6	"	"	"	17	68	time in bath
7	"	"	"	17	85	except left
8	"	"	"	17	102	knobs on
9	"	"	"	17	119	when recoated
10	"	83	"	17	136	
11	"	"	"	17	153	
12	"	"	"	17	170	
July 29, 20.						
1 A.M.	"	80		16	186	
2	"	80	"	16	202	
3	"	"	"	16	218	
4	"	"	"	16	234	
5	"	"	"	16	250	
6	"	"	"	16	266	
7	"	"	"	16.5	282	
8	"	"	"	16.5	299	
9	1170	80	9.5	16	315	
10	"	"	"	16	331	
11	"	"	"	15.5	346	
12	"	"	"	15.5	362	
1 P.M.	"	"	"	15.5	377	

4)768 / 16.3
47
298
282
16

6 Bath

Rubber varnish #12

July 29, 7

TIME	Sp. gr	TEMP	Volts	Amps	Total	
2PM	1176	80	9.5	15.5	393	
3	"	"	"	15.5	408	
4	"	82	9	15.5	424	
5	"	"	9.5	15.5	439	
6	"	83	"	15.5	454	Reconnected 2nd time
7	"	"	"	15.5	470	Solution is weak not
8	"	"	"	16	486	taken off
9	"	"	"	16	502	4th time
10	"	"	"	17.5	517	
11	"	"	"	16	533	
12	"	"	"	16	549	
AM	July	30				
1.00	"	"	"	16	565	
200	"	"	"	16	581	
300	"	80	"	16	597	
400	"	"	"	16	613	
500	"	"	"	16	629	
600	"	"	9	17	646	
700	"	"	"	17	663	
800	"	"	"	17	680	
9	"	"	"	17	697	
10	"	"	"	17.5	714	
11	1170	"	9.5	17.5	732	
12	"	"	"	18	750	
1 PM	"	"	"	18.5	768	Cut

#5 Batt

Rubber Varnish #20

Started July 28, 20 at 3 P.M.

TIME	Spec. Gr.	Temp.	Volts	Amp	Tot.	
P.M.	1170	80	9.5	20.5		
4	"	82	"	20.5	20	
5	"	"	"	20.5	41	1st time in
6	"	"	"	20.5	61	
7	"	"	"	21	82	
8	"	"	"	21	103	
9				21	124	
10	"	83	"	21	145	
11	"	"	"	21	166	
12	"	"	"	21	187	
July 29, 20.						
A.M.	"	80	"	~~20~~		
2	"	"	"	19.5	207	Sinks appeared
3	"	"	"	19.5	226	2-30 AM,
4	"	"	"	19.5	246	
5	"	"	"	19.5	265	
6	"	"	"	19.5	285	
7	"	"	"	19.5	304	
8	"	"	"	19.5	324	
9	1170	80	9.5	19.5	343	
10	"	"	"	19.5	363	
11	"	"	"	20	383	
12	"	"	"	20	403	
1 P.M.	"	"	"	19.5	422	
2	"	"	"	19.5	442	

41) 817 (19.9
41
407
369
380

#5 Bath

Rubberdermis Sw #20.

July 29, 20.

TIME	Sp Gr	Temp	Volts	Amps	Total	
3 PM	1120	80	9.5	19.5	461	
4	"	82	9.	19.	480	
5	"	"	9.5	19	499	
6	"	83	"	19.5	518	
7	"	"	"	19.5	538	
8	"	"	"	19.5	557	
9	"	"	"	19.5	576	
10	"	"	"	19.5	596	
11	"	"	"	19.5	[illegible]	
12	"	"	"	19.5	635	
July	July 30					
100	"	"	"	19.5	[illegible]	
200	"	"	"	19.5	[illegible]	
300	"	80	"	19.5	[illegible]	
400	"	"	"	19.5	[illegible]	
500	"	"		[illegible]	[illegible]	
600	"	"	9	20	[illegible]	
700	"	"		22	[illegible]	
800	"	"	"	22	746	
9	"	"	9	21	817	Out
10	"	"	9.5			
11	"	"	"			
12	"	"	"			
1 PM	"	"	"			

4 Bath

Rubber Varnish #10

Started July 29. 20.

TIME	Sp Gr	Temp	Volts	Amp	Total
3 P.M.	1170	80	9.5	15.5	
4	"	82	"	15.5	15
5	"	"	"	15.5	31
6	"	"	"	15.5	46
7	"	"	"	15.5	62
8	"	"	"	15.5	77
9	"	"	"	15.5	93
10		83	"	15.5	108
11			"	15.5	124
12,	1190		"	15.5	139
July 29					
1	"	80	"	15	154
2	"	"	"	15	169
3	"	"	"	15	184
4	"	"	"	15	199
5	"	"	"	15	214
6	"	"	"	15	229
7	"	"	"	15	244
8	"	"	"	15	259
9	1170	80	9.5	15.5	274
10	"	"	"	15.5	290
11	"	"	"	15	305
12	"	"	"	15	320
1 P.M.	"	"	"	15	335
2	"	"	"	15	350

5th time in bath was painted with rubber.

52) 821.6 / 15.8
52
301
326
416

#4 Bath

Rubber Varnish #10

July 29, 20.

TIME	Sp Gr	Temp	Volts	Amp	total	
3PM.	1170	80	9.5	15	365	
4	"	82	9.	15	380	
5	"	82	9.5	15.5	395	
6	"	83	"	15.5	410	
7	"	"	"	15.	425	
8	"	"	"	15.5	440	5th time iso
9	"	"	"	15.5	456	was reported
10	"	"	"	15.5	471	with Varnish
11	"	"	"	15.5	487	on,
12	"	"	"	15.5	502	
	July 30					
1.00	"	"	"	15.5	518	
2.00	"	"	"	15.5	533	
3.00	"	80	"	16	549	
4.00	"	"	"	16	565	
5.00	"	"	"	16	581	
6.00	"	"	9	15	596	
7.00	"	"		15	611	
8.00	"	"		15	626	
9	1170	80	9	15	641	
10	"	"	9.5	15	656	
11	"	"	"	15.5	671	
12	"	"	"	15.5	687	
1PM	"	"	"	16.5	710	
2	"	"	"	16.	726	
3	"	"	"	16	742	
4	"	"	"	16	758	
5	"	"	"	16	774	
6	"	"	"	16	790	
7	"	"	"	16	806	
8	"	"	"	15.5	821	out

7 Bath

Rubber Tamiski

July 29, 20. at 12 — AM. #17

Min	Sp. Gr.	Temp	Volts	Amps	Total
12AM	1170	80	9.5	15.5	
1PM	"	"	"	16	16
2	"	"	"	15.5	32
3	"	"	"	15.5	47
4	"	82	9.	15.5	63
5	"	"	9.5	15.5	78
6	"	83	"	15.5	94
7	"	"	"	15.5	109
8	"	"	"	16.0	125
9	"	"	"	16.0	141
10	"	"	"	15.5	156
11	"	"	"	16	172
12	"	"	"	16	188
July 30, 20.					
1AM	"	"	"	16	204
2	"	"	"	16	220
3	"	80	"	16	236
4	"	"	"	16	252
5	"	"	"	16	269
6	"	"	9	17	285
7	"	"	"	17	302
8	"	"	"	18	320
9	"	"	"	18	338
10	"	"	9.5	18	356
11	"	"	"	18	374

Knots taken off and recorded 3rd time in

46) 746

#7 Bath

Rubber Varnish

#17

July 30, 20

TIME	Sp Gr	Temp	Volts	Amps	Total	
12	1170	80	9.5	18.5	392	
1PM	"	"	"	18.5	411	
2	"	"	"	16.0	427	
3	"	"	"	16	443	Before putting in
4	"	"	"	16.6	459	bottle was taken
5	"	"	"	16	475	off and reported
6	"	"	"	16.5	492	rubber varnish,
7	"	"	"	16	508	3rd time in.
8	"	"	"	16	524	
9	"	"	"	16	540	
10	"	"	"	16	556	
11	"	"	"	16	572	Be carefull
12	"	"	"	16	588	when taking
1AM	"	"	"	16	604	this mould out
2	"	"	"	16	620	lug is read to
3	"	"	"	16	636	break of.
4	"	"	"	16	652	
5	"	"	"	16	668	
6	"	"	"	16	684	
7	"	"	"	16	700	
8	"	"	"	16	716	
9	"	"	"	16	732	
10	"	"	"	16	748	Cut

#3 Bath

Rubber Varnish

Started July 29 20. at 4 PM. #18

TIME	Speed	TEMP	Volts	Amps.	Total.	2nd time
4 PM	1170	82	9.	18.5		in after
5	"	"	9.5	18.5	18	stripping
6	"	83	"	18.5	37	Edge wiped by
7	"	"	"	18.5	55	finger
8	"	"	"	19.5	74	
9	"	"	"	19.5	94	
10	"	"	"	19.5	113	
11	"	"	"	19.5	[illegible]	
12	"	"	"	19.5	[illegible]	
July 30 20.						
1 AM	1170	80	9.5	19.5	[illegible]	
2	"	"	"	19.5	[illegible]	
3	"	80	"	20	[illegible]	
4	"	"	"	20	[illegible]	
5	"	"	"	20	[illegible]	
6	"	"	9	21	[illegible]	
7	"	"	"	21	[illegible]	
8	"	"	"	21	314	
9	"	"	"	21	335	
10	"	"	9.5	21	356	
11	"	"	"	21	377	
12	"	"	"	21	398	
1 PM	"	"	"	22	420	
2	"	"	"	19.5	439	
3	"	"	"	19.5	459	

40/815/20.3

#3 Bath Rubber varnish #18

TIME	Sp.Gr.	TEMP.	Volts	Amps	Ftals.	
4	1.170	80	9.5	19	478	
5	"	"	"	19.5	497	2nd time in
6	"	"	"	20	517	after stripping
7	"	"	"	19.5	537	Edge wiped by
8	"	"	"	19	556	finger
9	"	"	"	21	577	
10	"	"	"	21	598	
11	"	"	"	21	[illegible]	
12	"	"	"	21	[illegible]	
AM July 31						
100	1.170	80	"	20.5	6[illegible]	
200	"	"	"	20.5	6[illegible]	
300	"	"	"	21	7	
400	"	"	"	21	7	
500	"	"	"	[illegible]	74	
600	"	"	"	[illegible]	76	
700	"	"	"	[illegible]	7[illegible]	
800	"	"	"	[illegible]	815	Cut

#2 - Bath

Rubber Varnish #19

Started July 29, 20.

TIME	Sp. Gr.	TEMP	Volts	Amps	Total	
4 P.M.	1170	82	9.	14.5		
5	"	"	9.5	14.5	14	2nd time in
6	"	83	"	14.5	29	after stripping
7	"	"	"	14.5	43	Edge trimmed
8	"	"	"	17.	60	by mach.
9	"	"	"	17	77	
10	"	"	"	17	94	
11	"	"	"	17	111	
12	"	"	"	17	128	
July 30, 20.						
1 A.M.	1170	80	9.5	17	145	
2	"	"	"	17	162	
3	"	80	"	17.5	180	
4	"	"	"	17.5	197	
5	"	"	"	17.5	215	
6	"	"	9	17	232	
7	"	"	"	17	249	
8	"	"	"	17	266	
9	"	"	"	17	283	
10	"	"	9.5	17.5	300	
11	"	"	"	17.5	318	
12	"	"	"	17.5	335	
1 P.M.	"	"	"	17.5	353	
2	"	"	"	15.5	368	
3	"	"	"	15.5	384	

#2 Bath

Rubber varnish #19

July 30, 20.

Time	Sp. gr.	Temp	Volts	Amps	Total	
4	1170	80	9.5	15	399	
5	"	"	"	15.5	415	2nd time in
6	"	"	"	15	430	after stripping
7	"	"	"	15	445	Edge wiped off
8	"	"	"	15.5	460	machine.
9	"	"	"	15	475	
10	"	"	"	15	490	
11	"	"	"	15	505	
12	"	"	"	15	520	
AM July 31, 20.						
100	1170	"	"	12.5	535	
200	"	"	"	12.5	549	
300	"	"	"	15	564	
400	"	"	"	15	579	
500	"	"	"	15	594	
600	"	"	"	15	609	
700	"	"	"	15	624	
800	"	"	"	15	639	
9	"	"	"	15	654	
10	"	"	"	15.5	669	
11	"	"	"	15	684	
12	"	"	"	15	699	
1	"	"	"	15.5	715	
2	"	"	"	15.5	730	
3	"	"	"	15.5	746	Out

47 / 746 / 2 / 270

Aug 1 · 20

Had trouble during the hours of 4 AM and 7 AM. was stopping about every 20 min during last four hours. Screws on shaft continue to come loose. Had same trouble before.

Stopped 8-40 same trouble as before

8 Bath

Started July 30 20. at 3. P.M.

TIME	Sp.	TEMP	Volts	Amps	Total	
3PM	1170	80	9.5	15		
4	"	"	"	15	30	
5	"	"	"	15.5	45	4th time [illegible]
6	"	"	"	16	61	[illegible]
7	"	"	"	15.5	78	[illegible]
8	"	"	"	15	93	
9	"	"	"	17	110	
10	"	"	"	17	127	
11	"	"	"	14	144	
12	"	"	"	14	[illegible]	
July 31, 20						
100	1170	80	9.5	14	[illegible]	
200	"	"	"	14	[illegible]	
300	"	"	"	14	[illegible]	
400	"	"	"	14	[illegible]	
500	"	80	"	16.5	[illegible]	
600	"	"	"	16.5	[illegible]	
700	"	"	"	15	[illegible]	
800	"	"	"	15	[illegible]	
9	"	"	"	15	307	
10	"	"	"	15	322	
11	"	"	"	15	337	
12	"	"	"	15	352	
1	"	"	"	15	367	
2	"	"	"	15	382	

#8 Bath

Rubber varnish #16.

July 29

TIME	Sp. Gr.	TEMP	Volts	Amps	Total
3	1170	80	9.5	15	397
4	"	"	"	15	412
5	"	"	"	15	427
6	"	"	"	15	442
7	"	"	"	15	457
8					
9					
10					
11	1170	"	"	15	
12	"	"	"	15	
AM	Aug 1				
1.00	"	"	"	15	
2.00	"	"	"	15	
3.00	"	"	"	15	
4.00	"				
5.00	"	9	"	7	
6.00	"	"	"	7	
7.00	"	"	"	7	
8.00	"	9.5	"	7	
9.00	"	"	"	15	613
10.00	"	"		15	633
3.00	1170	9.5	80	15	648
4.00	"	"	"	15	663

4 5 time in tanks left on not treated.

Shut off

over next page.

No 8 Bath
Rubber Varnish
#16

Time	Sp Gr	Temp	Volts	Amps	Total
5.00	1170	80	9.5		15 678
6 "	"	"	"		15 693
7 "	"	"	"		15 408
8 "	"	"	"		15 423
9 "		"			15 438
10					15 453

Out

48 / 48 / 273 / 210 / 30 / 336

15.7

#5 Bath
Rubber Varnish
Started July 30 20 at 4 P.M. #20

TIME	Sp Gr	TEMP	Volts	Amps	Total
4 P.M.	1170	80	9.5		
5	"	"	"	20.5	20
6	"	"	"	20	40
7	"	"	"	20	60
8	"	"	"	21	81
9	"	"	"	22.5	103
10	"	"	"	22.5	126
11	"	"	"	22.5	148
12	"	"	"	22.5	171
July 31 20.					
1 AM	1170	80	9.5	22	193
2	"	"	"	22	215
3	"	"	"	23	238
4	"	"	"	23	261
5	"	80	"	16	277
6	"	"	"	16	293
7	"	"	"	16	309
8	"	"	"	16	325
9	"	"	"	23.5	348
10	"	"	"	23	371
11	"	"	"	23	394
12	"	"	"	23.5	418
1 P.M.	"	"	"	23	441
2	"	"	"	22	463
3	"	"	"	22	485

2 and 4 times in no knots.

30) 796 (21
36

5 Batt

Rubber varnish
#20

TIME	Sp Gr	Temp	Volts	Amp	Total	
4	1170	80	9.5	23	508	
5	"	"	"	23	581	
6	"	"	"	23	554	
7	"	"	"	23	577	
8						
9		Shut Down				
10						
11	1170	"	"	21	598	
12	"	"	"	21	619	
AM	avg 1					
100	"	"	"	21	640	
200	"	"	"	21	661	
300	"	"	"	21	682	
400	"	"	"	21	703	
500	"	9	"	20	723	
600	"	"	"	18	741	
700	"	"	"	18	759	
800	"	9.5	"	18	777	
900	"	"	"	17	796	Out
11-00	"	9-5	"			

Exp 24 A B -
Removed from Nickel after 100 amp hrs + put in Cu with full current on

noted 6/10/03
PB Kenton

6 Cu Bath

Started July 31 9 AM Exp's 24-A-B

TIME	Sign	Temp	Volts	amps	Total
9 AM	1170	80	9.5	15	
10	"	"	"	15	15
11	"	"	"	15.5	30
12	"	"	"	15.5	46
1 PM	"	"	"	15.5	61
2	"	"	"	16	77
3	"	"	"	16	93
4	"	"	"	16	109
5	"	"	"	16	125
6:1	"	"	"	16	141
7	"	"	"	16	157
8	"	"	"		
		Shut Down			
1100	1170	"	"	15.5	193
1200	"	"	"	15.5	198
AM	Aug 1				
100	"	"	"	15.5	204
200	"	"	"	15	217
300	"	"	"	15	234
400	"	"	"	15	249
500	"	9	"	14.5	263
600	"	"	"	14.5	278
700	"	"	"	14.5	292
800	"	9.5	"	14.5	307

No 6 Bath
Exp 24 A-B

Time	Sp gr	Temp	Volts	Amps	Total
900	1170	80	9.5	15	322
10 "	"	"	"	15	337
	Shut	Down			
3,00	"	"	"	15	352
4 00	"	"	"	15	367
5 "	"	"	"	15	382
6 "	"	"	"	15	397
7 "	"	"	"	15	412
8 "	"	"	"	15	427
9 "	"	"	"	15	442
10 "	"	"	"	15	457
11 "	"	"	"	16	473
12 "	"	"	"	16	489
AM	Aug 2				
1,00	1170	"	"	16	515
2 "	"	"	"	16	531
3 "	"	"	"	16	547
4 "	"	"	"	16	563
5 "	"	"	"	16	579
6 "	"	"	"	16	595
7 "	"	"	"	16	611
8 "	"	"	"	16	627
9 "	"	"	"	16	643
10 "	"	"	"	16	659

#6 Cu Bath
Aug 2, 20.
Exp 24 A-B

Time	Sp Gr	Temp	Volts	Amps	Total
11 AM	1170	80	9.5	16.5	685
12 "	"	"	"	16.5	702
1 PM	"	"	"	16.5	718
2	"	"	"	16	734
3	"	"	"	16.5	750
4	"	"	"	16.5	767
5	"	"	"	16.5	783
6	"	"	"	16.5	800
7	"	"	"	16.5	816

Cut

16

51

816
51
867

Exp 25AB.

Removed from Cu after 100 amp hrs T. but in Cu wk full current on.

noted 6/15/63 Kasulcor

July 31 #4 Cu Batt Exp 25H-B

TIME	Sp gr	Temp.	Vol	amp	Total
9 AM	1070	8.0	9.5	15	
10	"	"	"	15	15
11	"	"	"	15.5	30
12	"	"	"	15.5	46
1 PM	"	"	"	15.5	61
2	"	"	"	15.5	77
3	"	"	"	15	92
4	"	"	"	15	107
5	"	"	"	15	122
6	"	"	"	15	137
7	"	"	"	15	152
8		Shut Down			
1100	1070	8.0	9.5	15.5	167
1200	"	"	"	15.5	183
AM		Aug 1			
100	"	"	"	15.5	[illegible]
200	"	"	"	15	[illegible]
300	"	"	"	15	[illegible]
400	"	"	"	15	243
500	"	9	"	15	[illegible]
600	"	"		15	[illegible]
700	"	"	"	15	288
800	"	9.5	"	15	303
900	"	9.5	"	16	319

No. 4 Bath 25A-B

Time	Sp.g.	Temp.	Volts	Amps	Total
1 as	1170	80	9.5	15	334
3.00	1170	80	9.5	15	349
4 "	"	"	"	15	364
5 "	"	"	"	15	379
6 "	"	"	"	15	394
7 "	"	"	"	15	409
8 "	"	"	"	15	424
9 "	"	"	"	15	439
10 "	"	"	"	15	454
11 "	"	"	"	15	469
12 "	"	"	"	15	484
AM	Aug 2				
100	"	"	"	15	499
2 "	"	"	"	15	514
3		"		16	530
4 "	"	"	"	16	546
5 "	"	"	"	16	562
6	"	"	"	16	578
7 "			"	16	594
8 "	"	"	"	16	610
9	"	"	"	16	626
10	"	"	"	16	642
11	"	"	"	16	658
12	"	"	"	16	674
1 PM	"	"	"	16	690
2	"	"	"	16	706

Up

3PM	1170	80	9.5	74
4	"	"	" 16	75
5	"	"	16	79
6	1175	"	17	80
7	"	"		

Out

16

80
51
801
300

2 Bath

Start July 31, 20 at 7 P.M. Eff# 26A-B

TIME	Sp gr	Temp	Volts	Amp	Total
7PM	1170	80	9.5	15.5	

Shut Down

100	1170	80	9.5	14.5	14
200	"	"	"	14.5	29
AM	Aug 1				
100	"	"	"	14.5	44
200	"	"	"	15	59
300	"	"	"	15	74
400	"			15	89
500	"	9	"	15	104
600	"	"	"	14	118
700			"	14	132
800		9.5	"	14	146
900	"		"	15	161
10.00	"	"	"	15	176
	Shut down				
3.00	1170				
4 "	"	"	"	15	191
5 "	"	"	"	15	206
6 "	"	"	"	15	221
7 "	"	"	"	15	236
8 "	"	"	"	15	251
9	"	"	"	15	266
10.00	"	"	"	15	281

#2 Batch

Exp #26AB

	Spgr	Temp	Volts	Amp	Total
11:00	1170	80	9.5	16	297
12 "	"	"	"	16	313
AM	Aug 2				
1:00	"	"	"	16	329
2 "	"	"	"	16	345
3 "	"	"	"	16	361
4 "	"	"	"	16	377
5 "	"	"	"	16	393
6 "	"	"	"	16	409
7 "	"	"	"	16	425
8 "	"	"	"	16	441
9	1170	80	9.5	16	457
10	"	"	"	16	473
11	"	"	"	14	487
12	"	"	"	14	501
1 PM	"	"	"	14	515
2	"	"	"	14	529
3	"	"	"	16	544
4	"	"	"	15	559
5	"	"	"	15	574
6	"	"	"	15	589
7	"	"	"	15	594
8	"	"	"	15	609
9					

Cut

#2 Batch Exp 26 HB.

~~#3~~ Batch.

Started July 31, 20 at 7PM

Exp #27 HB

TIME	Sp Gr	Temp	Volts	amp	Total	
7PM.	1170	80	9.5	18		Burnt Center
		Shut Down				
1100	1170	80	9.5	18	18	
1200	"	"	"	18	36	
AM	Aug 1					
1,00	"	"	"	18	54	
200	"	"	"	19	73	
300	"	"	"	19	92	
400	"	"	"	19	111	
500		"	9	19	130	
600		"	"	18	148	
700		"	"	18	166	
800		"	9.5	18	184	
900	"	"	"	19	203	
10.00	"	"	"	19	222	
		Shut Down				
3.00	1170	80	9.5	19	241	
4"	"	"	"	19	260	
5"	"	"	"	19	279	
6"	"	"	"	19	298	
7"	"	"	"	19	317	
8	"	"	"	19	336	
9	"	"	"	19	355	

#3 Bath

Equip. #27AB

	Sp gr	Temp	Volts	Amp	Total	
10:00	1170	80	9.5	19	344	
11:00	"	"	"	19	393	
12:00	"	"	"	19	412	
1 AM	Aug	2 -	20			
1:00	1170	80	9.5	20	432	
2:00	"	"	"	20	452	
3:00	"	"	"	21	473	
4:00	"	"	"	21	494	
5:00	"	"	"	21	515	
6:00	"	"	"	21	536	
7:00	"	"	"	21	557	
8:00	"	"	"	21	578	
9	1170	80	9.5	21	599	
10	"	"	"	21	620	
11	"	"	"	20	640	
12	"	"	"	20	660	
1 PM	"	"	"	20	680	
2	"	"	"	20	700	
3	"	"	"	20	720	
4	"	"	"	20	740	
5	"	"	"	20	760	
6	1175	"	"	21	781	
7	"	"	"	21	802	Out

#1) 802 / 19 = 42.2

~~392~~ 360 / 23

No. 7 Bath

Time	[illegible]	Jerah	Volts	Amp	Total
1.00		80	95	1	
[illegible]			"	1	1